Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	10/619,286	KRYWICZANIN ET AL.	
	Examiner	Art Unit	
	Alexander Grosz	3673	

All Participants:

(1) *Alexander Grosz*.

(2) MR CERNYAR

Status of Application: _____

(3) _____.

(4) _____.

Date of Interview: 10/27/04; 11/22/04

Time: _____

Type of Interview:

☒ Telephonic
☐ Video Conference
☐ Personal (Copy given to: ☐ Applicant ☐ Applicant's representative)

Exhibit Shown or Demonstrated: ☐ Yes ☐ No
If Yes, provide a brief description:

Part I.

Rejection(s) discussed:
PROPOSED REJECTION OVER OLOFF

Claims discussed:
1, 7, 17

Prior art documents discussed:
OLOFF

Part II.

SUBSTANCE OF INTERVIEW DESCRIBING THE GENERAL NATURE OF WHAT WAS DISCUSSED:
NOTE AMENDED RNA AMDT.

Part III.

☒ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview directly resulted in the allowance of the application. The examiner will provide a written summary of the substance of the interview in the Notice of Allowability.

☐ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview did not result in resolution of all issues. A brief summary by the examiner appears in Part II above.

(Examiner/SPE Signature) (Applicant/Applicant's Representative Signature – if appropriate)

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DATE: October 27, 2004

TO: Exam. Alexander Grosz, Art Unit 3628 FAX: (703) 746-3835

FROM: Eric W. Cernyar PHONE: (210) 863-0063

Number of pages including cover sheet: 6

RE: Patent App. No. 10/382,441
Title: "Rotation Limiter for Lateral Rotation Bed"
Filed: March 6, 2003
Examiner: Alexander Grosz
Art Unit: 3628
Docket No.: ROT.706F.US

Enclosed:
5 pages distinguishing pending claims from Oloff and, although unnecessary to distinguish Oloff, proposing new amendments to the independent claims.

Appl. No. 10/619,286
Date: October 27, 2004
Informal Communication

Appl. No.	:	10/619,286	Confirmation No.: 9335
Applicants	:	Krywiczanin	
Filed	:	7/14/2003	
Title	:	Power and Electrical Signal Interface for a Therapeutic Bed	
TC/A.U.	:	3673	
Examiner	:	Alexander Grosz	
Docket No.:	:	ROT.706D.US	

Attn: Alexander Grosz
VIA FACSIMILE: (703) 746-3835

INFORMAL COMMUNICATION

Applicants thank the Examiner for the telephone communication dated 10-27-04, in which the Examiner suggested that Applicants review U.S. Patent No. 5,275,132 to Oloff and make arguments distinguishing the reference.

Oloff discloses a roto-positioning apparatus to simulate and study the effects of weightlessness on subhuman primates such as rhesus monkeys. The roto-positioning apparatus has a frame (10), a subframe (40) rotatably attached to the frame (12), and a carrier (56) for a primate restraint system rotatably attached to the subframe (56). (See Abstract). Oloff also discloses "electrical slip rings for transmitting physiological sensor signals from the test animal through the rotating connections of the carrier, subframe, and frame." Col. 2, lines 37-39. In the Abstract and Summary of the Invention sections, Oloff suggests that "radio-telemetry" may be used "in place of electrical slip rings for transmitting physiological sensor signals," but Oloff does not further describe the structure of a radio-telemetry based structure.

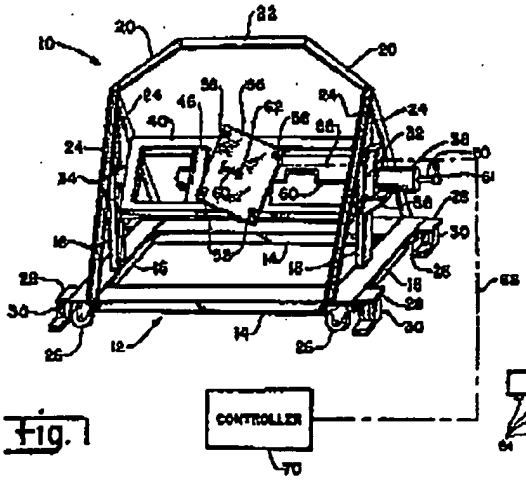


Fig. 1

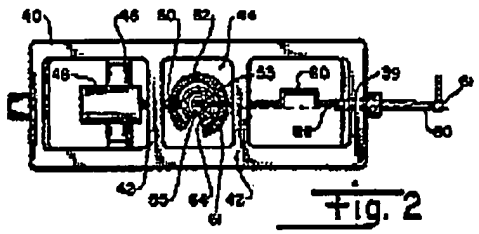


Fig. 2

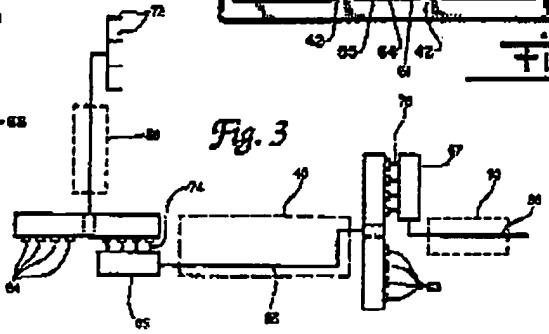


Fig. 3

In the telephone interview today, the Examiner asked the undersigned to consider how Oloff would have implemented the circuit and block diagram of Fig. 3 on the frame, subframe, and carrier assembly of Figs. 1 and 2. Oloff's detailed description, once deciphered, makes it fairly clear.

Fig. 3 depicts "a representational diagram of an example connection of slip rings and slip ring brushes showing the transmission of physiological sensor and other signals across two separate rotational axes of the connected frame, subframe and carrier." Col. 2, lines 57-61. As an initial matter, it is helpful to realize that the dashed boxes labeled (56), (40), and (10) in Fig. 3 correspond to the carrier, subframe, and frame, respectively, that bear the same reference numbers in Fig. 1.

To start with, physiological transducers are connected to a primate carried on carrier (56). Col. 4, 7-10. Leads (72) connect these transducers to an assembly of electrical slip rings (64) that are mounted on the inside of a cutout portion of the ring gear (52). Col. 3, lines 58-60; col. 4, lines 7-10; *see also numeral (64) in Figs. 2 and 3*. Col. 3, lines 33-38, indicates that the ring gear (52) is connected to (and therefore evidently rotates with) the carrier (56). Therefore, it follows that this first group of electrical slip rings (64) is mounted to, or at least in fixed relation with (i.e., it moves or rotates with), the carrier (65).

Next, it is evident that the corresponding slip ring brush assembly (65) must be mounted on the subframe (40) – most likely on plate (44) of subframe (40). Col. 3, lines 33-38. Col. 4, lines 10-15 states that "[c]orresponding brushes 74 on brush assembly 65 wipe across rotating individual slip rings 64" and transmit signals from those slip rings (64) "to wires or other means 66 *which are stationary relative to the subframe 40.*" Note that Fig. 3 depicts two sets of wires 66: one is shown inside the dashed box (40), representing the subframe, and the other is shown in the dashed box (10), representing the frame. A comparison of Fig. 3 with Fig. 1 suggests that the second (66) in Fig. 3 was a typographical mistake. The wire depicted inside dashed box (10) should have been labeled (68), not (66). *See also* col. 3, lines 62-68.

From Fig. 3, it is plain that the set of wires (66) that are "stationary relative to the subframe 40," connects the brush assembly (65) to a second set of slip rings (63). Col. 3, lines 64-68 acknowledges that the second set of slip rings (63) are hidden from view in Fig. 1 – but that passage notes that the slip ring assembly (63) is "mounted by the bearing 32." Notably, the entire subframe (40) is also mounted by bearings (32) and (34). Col. 3, lines 17-25. And col. 4, lines 17-18 states that the second set of slip rings (63) "rotates with subframe 40 relative to frame 10." Therefore, it is evident that the second group of electrical slip rings (63) is mounted to, or at least in fixed relation with, the subframe (40).

Finally, brushes 76 on the second slip ring brush assembly 67 carry signals from the slip rings (63), through wires (68), to the controller (70). Col. 4, lines 15-28. Although Oloff does not expressly so state, it is evident that the brush assembly (67) must be mounted to the frame (10).

The same wires (66) and (68) that transmit the physiological signals are also presumably used to power the motor (48) carried on the subframe. Col. 4, lines 35-41; *see also* Fig. 1.

In summary, Oloff's use of slip rings and wire brush assemblies does not inherently disclose a "direct electrical connection" that is "adapted to flex during rotation of the patient support platform" (claim 1). Nor does it inherently disclose "a cable housing mounted to the patient support platform, the cable housing defining a channel to shield and prevent entanglement of the cable during rotation of the patient support platform" (claims 7, 17). The same is also true for the alternative taught by Oloff – replacing the electrical slip rings with radio telemetry. As noted in the response to the July 27 office action,

> Both the literal text and the specification make it clear that a direct wired electrical connection, as used in the claims, excludes the prior art wire brush power-connection interface described in WO 99/62454. It would also plainly exclude a patient support platform-mounted patient monitoring device solely powered by a patient support platform-powered battery and solely using wireless radio transmissions to transmit patient monitoring data.

Therefore, claims 1, 7 and 17 in their presently pending form patentably define over the Oloff reference, just as they do over WO 99/62454.

The Examiner also asked that the Applicants consider adding further negative and functional limitations to the three independent claims. Applicants note that claim 1 already recites a functional limitation – "the direct electrical connection being adapted to flex during rotation of the patient support platform between the supine and prone positions." Oloff's use of wire brushes or radiotelemetry does not teach, suggest, or imply that a "direct electrical connection ... adapted to flex during rotation" be used.

Although not necessary to distinguish the claim from Oloff, Applicants propose the following amendment to claim 1:

Claim 1 (proposed amendment): A therapeutic bed comprising:

a base frame;

a patient support platform rotationally mounted on the base frame and operable to be rotated from a supine position to a prone position;

an electrically powered patient monitoring system connected to the patient support platform; and

a direct wired electrical connection between the base frame and the patient monitoring system, a first portion of the wired electrical connection being mounted in fixed relation to the

base frame, and a second portion of the wired electrical connection spaced apart from the first portion being mounted in fixed relation to the patient support platform, the direct electrical connection being adapted to flex during rotation of the patient support platform between the supine and prone positions;

wherein the direct wired electrical connection does not include a wire-brush electrical interface between the base frame and the patient support platform;

the direct wired electrical connection thereby reducing the risk of electrical intermittence caused by vibrations and abrupt movements of the therapeutic bed.

Support for this negative limitation and functional recitation is provided in paragraph 5 of the specification. It is believed that the negative limitation is proper under MPEP 2173.05(i).

Applicants are especially reluctant to amend claims 7 or 17, which were already allowed over WO 99/62454 and are equally allowable over Oloff. But in the interests of completing prosecution, Applicants are willing to make the following amendments to claims 7 and 17:

Claim 7 (proposed amendment): A therapeutic bed comprising:

a base frame;

a patient support platform rotationally mounted on the base frame;

a cable, not physically connected to any wire-brush electrical interface, for conveying power or electrical signals to the patient support platform; and

a cable housing mounted to the patient support platform, the cable housing defining a channel to shield and prevent entanglement of the cable during rotation of the patient support platform.

Claim 17 (proposed amendment): A therapeutic bed comprising:

a base frame;

a patient support platform rotationally mounted on the base frame;

a cable, not physically connected to any wire-brush electrical interface, for conveying power or electrical signals to the patient support platform;

a cable housing mounted to the patient support platform so that it rotates with the patient support platform, the cable housing defining a channel to shield and prevent entanglement of the cable during rotation of the patient support platform; and

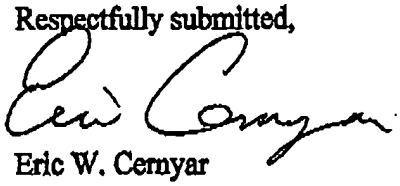
a stationary cover for the cable housing, the cover being affixed to the base frame, wherein the cover remains stationary during rotation of the patient support platform;

wherein a first portion of the cable is fixedly attached to the cable housing and a second portion of the cable is fixedly attached to the cover.

Paragraph 5 of the specification also provides support for these proposed amendments. It is believed that such negative limitations are proper under MPEP 2173.05(i).

Applicants thank the Examiner for his search and discovery of the Oloff reference, and for his courtesy in bringing it to the undersigned's attention. Feel free to contact me at any time to discuss these matters further.

Respectfully submitted,



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